

Application of: IMAMURA, et al.
Serial No. 09/121,017
Filed: July 22, 1998

VERSION OF AMENDMENTS
WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

1. (Three Times Amended) A heparin-binding protein comprising at least one covalently bonded sugar chain, wherein the at least one sugar chain is [being] selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof, wherein the residual activity of the heparin-binding protein is increased by adding the at least one covalently bonded sugar chain.

17. (Amended) The heparin binding protein of claim 16, wherein the heparin-binding protein comprising the covalently bonded sugar chain comprises:

(a) a protein consisting of the amino acid sequence of SEQ ID NO: 1, 3, 5, 17, 19, 21, 23, 25, 27 or 29; or

(b) a protein which consists of the amino acid sequence of SEQ ID NO: 1, 3, 5, 17, 19, 21, 23, 25, 27 or 29 having a deletion, substitution, addition or modification of at least one amino acid, wherein the heparin-binding protein has FGF activity and the sugar chain [can be] is added thereto.

18. (Twice Amended) [An improved] A heparin-binding protein which comprises a heparin-binding protein functionalized by covalently bonding thereto at least one sugar chain, wherein the at least one sugar chain is covalently bonded through a peptide to which the sugar chain is added thereby increasing the residual activity of the heparin-binding protein, said at least one sugar chain selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof.

19. (Thrice Amended) A heparin-binding protein comprising a plurality of covalently bonded sugar chains, wherein the sugar chains are selected from the group consisting of a

sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof, wherein the sugar chains are covalently bonded through a peptide to which the sugar chains are added thereby increasing the residual activity of the heparin-binding protein.

20. (Twice Amended) [An improved] A heparin-binding protein comprising a heparin-binding protein containing a peptide sequence to which at least one sugar chain is covalently bonded, wherein the at least one sugar chain is covalently bonded through the peptide sequence to which the at least one sugar chain is added, thereby increasing the residual activity of the heparin-binding protein, said at least one sugar chain selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof.

23. (Amended) [An improved] A heparin-binding protein which comprises a heparin-binding protein modified with covalently bonded sugar chains, the sugar chain being selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan and combinations thereof, wherein the activity of the heparin-binding protein is greater than the activity of the unmodified protein.

Application of: IMAMURA, et al.
Serial No. 09/121,017
Filed: July 22, 1998

**"CLEAN" VERSION OF AMENDED CLAIMS
INCLUDING AMENDMENTS MADE**

IN THE CLAIMS

Please amend claims 1, 17, 18, 20, 23 as follows:

1. (Three Times Amended) A heparin-binding protein comprising at least one covalently bonded sugar chain, wherein the at least one sugar chain is selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof, wherein the residual activity of the heparin-binding protein is increased by adding the at least one covalently bonded sugar chain.

17. (Amended) The heparin binding protein of claim 16, wherein the heparin-binding protein comprising the covalently bonded sugar chain comprises:

- (a) a protein consisting of the amino acid sequence of SEQ ID NO: 1, 3, 5, 17, 19, 21, 23, 25, 27 or 29; or
- (b) a protein which consists of the amino acid sequence of SEQ ID NO: 1, 3, 5, 17, 19, 21, 23, 25, 27 or 29 having a deletion, substitution, addition or modification of at least one amino acid, wherein the heparin-binding protein has FGF activity and the sugar chain is added thereto.

18. (Twice Amended) A heparin-binding protein which comprises a heparin-binding protein functionalized by covalently bonding thereto at least one sugar chain, wherein the at least one sugar chain is covalently bonded through a peptide to which the sugar chain is added thereby increasing the residual activity of the heparin-binding protein, said at least one sugar chain selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof.

19. (Thrice Amended) A heparin-binding protein comprising a plurality of covalently bonded sugar chains, wherein the sugar chains are selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof, wherein the sugar chains are covalently bonded through a peptide to which the sugar chains are added thereby increasing the residual activity of the heparin-binding protein.

20. (Twice Amended) A heparin-binding protein comprising a heparin-binding protein containing a peptide sequence to which at least one sugar chain is covalently bonded, wherein the at least one sugar chain is covalently bonded through the peptide sequence to which the at least one sugar chain is added, thereby increasing the residual activity of the heparin-binding protein, said at least one sugar chain selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, and combinations thereof.

23. (Amended) A heparin-binding protein which comprises a heparin-binding protein modified with covalently bonded sugar chains, the sugar chain being selected from the group consisting of a sulfated polysaccharide, a glycosaminoglycan, an O-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan, an N-linked sugar chain combined with a sulfated polysaccharide or a glycosaminoglycan and combinations thereof, wherein the activity of the heparin-binding protein is greater than the activity of the unmodified protein.